

From: [Foresman, Erin](#)
To: [Denton, Debra](#)
Subject: RE: Bay Area Urban Crks Diaz Tox
Date: Tuesday, April 07, 2015 1:33:56 PM
Attachments: [7-Bay Area Urban Creeks Diaz Tox TMDL Implementation Report \(031115 clean\).docx](#)

Erin Foresman

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Schedule: M 7:30a - 4:00p; T - F 7:30a - 2:00p

From: Denton, Debra
Sent: Tuesday, April 07, 2015 1:26 PM
To: Foresman, Erin; O'Hara, Janet@Waterboards
Cc: Cabrera-Stagno, Valentina; King, Amy
Subject: RE: Bay Area Urban Crks Diaz Tox

Hi all,

To clarify the test biological endpoint is all the same, % survival. We need to test with a suite of appropriate test species (especially when determining the potential toxicity to different types of pesticides with different modes of toxic action) and include both water column and sediment toxicity test methods, especially for pesticides like pyrethroids with higher Kd (partitioning to sediment). We could use a simple conceptual model (cartoon) to show this?

I need to read/review the write up too.

PEACE = Purposefully Express Appreciation and Compassion for Everyone

Debra

Disclaimer: This message was written with voice activated software. It may contain errors. Some of them might be interesting. Observe the context and the meaning will, hopefully, be obvious.

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From: Foresman, Erin
Sent: Tuesday, April 07, 2015 1:11 PM
To: O'Hara, Janet@Waterboards; Denton, Debra
Cc: Cabrera-Stagno, Valentina; King, Amy
Subject: RE: Bay Area Urban Crks Diaz Tox

Hi Jan,

Thank you so much for the speedy reply and feedback with context. It is really helpful. I think it makes sense then to use both the sed and water column tox data because they illustrate the different tox end points as pesticide usage has evolved over the years since the adoption of the TMDL.

So glad you could use the tox measurement as a % of control graph! Amy and her team are pretty great! Thanks Amy ☺.

Erin Foresman

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From: O'Hara, Janet@Waterboards [mailto:Janet.O'Hara@waterboards.ca.gov]
Sent: Tuesday, April 07, 2015 12:48 PM
To: Denton, Debra; Foresman, Erin
Cc: Cabrera-Stagno, Valentina; King, Amy
Subject: RE: Bay Area Urban Crks Diaz Tox

Hi All,

Thanks for the update! Regarding the issue of water vs. sediment toxicity: The TMDL focused on water tox with *C.dubia* because diazinon caused water column toxicity and *C. dubia* was the endpoint. Now diazinon is phased-out and has been replaced by pyrethroids in urban uses, and pyrethroids cause/contribute to sediment toxicity (they do not partition readily to water, instead pyrethroids bind to sediments), and pyrethroids are highly toxic to *Hyalella*. Forgive me if you've got this already, but my read of your email seems to ask about this. FYI, now that fipronil has entered the urban pesticide marketplace we are requiring toxicity tests to include an new endpoint, *Chironomus dilutes*, in sediment.

How important is it to include the various ways of visualizing toxicity in the report card? Use the visual that could tell how the story changes over time – then updates will be easier & more meaningful. Using the bins (as Debra describes below) might be a good way to see water and sediment toxicity change over time, if it fits in your format. I would definitely include both sediment and water column toxicity, whatever visual you choose (I'm thinking you could combine them – no? At least for the “toxicity measurement as a % of Control” graph).

Another FYI, I used your “toxicity measurement as a % of Control” graph b/c it fits in the format required by the State Board – thanks!!

Regards,
Jan

From: Denton, Debra [<mailto:Denton.Debra@epa.gov>]
Sent: Tuesday, April 07, 2015 9:21 AM
To: foresman.erin@epa.gov; O'Hara, Janet@Waterboards
Cc: Cabrera-Stagno, Valentina; King, Amy
Subject: RE: Bay Area Urban Crks Diaz Tox

Hi All

Just to clarify,

Will you let us know your opinion on how we show these data? Do we include both C. dubia and H.azteca? It important to have both the % survival charts and the table with the bins that incorporate the statistical tests?

The bins is “threshold grades”, like yellow light (toxic), orange light, and red light (highly toxic) after the initial statistics is conducted (either t test or the TST t test). This is what the SWAMP in their statewide report presented and SPoT too for sediment toxicity statewide. After the statistics of the individual test is calculated using either a standard t test or the TST t test analysis. Then, they have the threshold bins (magnitude of toxicity). See those reports.

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From: Foresman, Erin
Sent: Tuesday, April 07, 2015 9:13 AM
To: O'Hara, Janet@Waterboards
Cc: Cabrera-Stagno, Valentina; King, Amy; Denton, Debra
Subject: RE: Bay Area Urban Crks Diaz Tox

Hi Janet,

Thank you so much for your message and your invaluable help as we complete these progress reports. I attached the most recent version of the report dated 4/1/15. I also attached the redline strike-out version from earlier in March when Amy King from Tetratex worked on addressing your comments. Take a look and let us know if you have additional comments.

We are also hoping to get some feedback from you on how we show toxicity data. We sent the report to Debra Denton for her comments and she suggested we show toxicity data consistent with the State's [SPoT Report](#), (Table 3, page 27). Amy looked at the available data and reported that there are 430 samples associated with *C. dubia* and only 5 with *hyalella*. There are also 312 sediment samples with t test findings for %survival for *hyalella*. Amy confirmed that the CEDEN data have some t-test significance results based on percent survival (essentially just Y/N for significance based on the t-test). The TMDL focuses on *C. dubia* in water. Most of these samples do not show statistically significant toxicity but the sediment results for *hyalella* do show many samples characterized as toxic. So that leaves us with the question of what do we show in the progress report?

Based on Amy's review of the available data, we have the data to create the survival plots and/or use the t-test results in a table like Table 3 in the SPoT report. We could show % survival in plots for *C. dubia* in water and *H. Azteca* in sediment. I think we can produce a table like table 3 in the SPoT report for *H. Azteca* but we would not have as many categories for the table, just toxic and non-toxic.

Will you let us know your opinion on how we show these data? Do we include both *C. dubia* and *H.azteca*? It important to have both the % survival charts and the table with the bins that incorporate the statistical tests?

Thanks again for all of your support,
Erin

Erin Foresman

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From: O'Hara, Janet@Waterboards [mailto:Janet.O'Hara@waterboards.ca.gov]

Sent: Monday, April 06, 2015 4:56 PM

To: Foresman, Erin

Subject: Bay Area Urban Crks Diaz Tox

Hi Erin,

I'm updating a 2-page "report card" on the Diazinon & Pesticide-related Toxicity TMDL for the State Water Board and it's wonderful to have the 6-page report you drafted to help with that. Just wondering – did you ever get a chance to finalize that? The version I have is dated 013015.

Thanks and best regards,

Jan